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Criteria and indicators for individual and group certification of Sustainable Forest Management

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In the event of inconsistencies between the English and Italian versions, the English version of the standard approved by the PEFC Council shall refer.

Summary

Framing and definitions

According to the PEFC Standard, the evaluation of sustainable forest management (SFM) is based on the criteria (C), indicators (I) and operational guidelines (LG) developed at the Helsinki and Lisbon Ministerial Conferences, during the so-called 'Pan-European Process' for the protection of forests in Europe.

This document is structured in such a way as to respect the division of the six defined criteria of sustainable forest management at a pan-European level, with a view to using them at a national level for the certification of the forestry sector only (not for arboriculture)

Rules for reading the document
Each criterion is numbered from 1 to 6 and can encapsulate guidelines for forest management planning and practice.
Guidelines are mandatory requirements when they are present and must be complied with, even beyond the scope of the indicators indicated under them. Indicators may be mandatory or informative.

Informative' indicators are reported with the aim of improving information and communication between the various stakeholders in sustainable forest management.
The 'compulsory' indicators, on the other hand, are relevant to the forest system and forest management and form the basis for verifying the certification criteria.
For each indicator, there are
MEASUREMENT PARAMETERS: measurable quantities or elements to be evidenced CRITICALITY THRESHOLD (for mandatory indicators): requirement
SCOPE OF IMPROVEMENT: proposed thematic line for performance improvement SOURCE OF INFORMATION AND RECORDING: examples of tools to be used to collect information

Requirement for access to the certification system
Compliance with laws at various levels (regional, national and EU) is a mandatory prerequisite, so it is a concept that is not made explicit in the various indicators.
In the case of group certification, only PEFC group members will be considered certified; only their forest area will be considered certified and only forest material from it will therefore be considered certified.

This document has been drawn up on the basis of PEFC Standard ST 1003:2024.

All definitions relevant for the interpretation of this standard are in ITA 1000 (Chapter 1.3.1).

CRITERION 1

MAINTENANCE OR APPROPRIATE ENHANCEMENT OF FOREST RESOURCES AND THEIR CONTRIBUTION TO THE GLOBAL CARBON CYCLE

GL 1.1 Forest management must safeguard in the medium and long term the quantity and quality of forest resources and their capacity to store and sequester carbon, balancing utilisation with the rate of increment, using appropriate silvicultural measures and techniques, and preferring techniques that minimise direct and indirect impacts on forest, water and soil resources.
Suitable silvicultural and planning measures should be adopted to maintain or bring forest wood mass levels to economically, ecologically and socially desirable thresholds. Climate-positive practices such as maintaining or improving carbon sequestration, reducing climate-altering gas emissions and efficient use of resources should be implemented.

Indicator 1.1 a	Forest area, other wooded land and changes in area (classified, where relevant, according to forest and vegetation types, ownership structure, chronological classes, forest origin)
Type of indicator	Mandatory
Measurement Parameters	Forest area in ha. ___ Change %___over the period of no._years. Form of management: %____forest; %_____coppice; %___mixed forms.
Criticality threshold	The reduction of forest area, especially if it has a significantly high carbon stock, is not allowed, except in documented cases that depend on management and planning policies, or in cases where there is offsetting according to current legal regulations. In these circumstances, however, it is necessary to provide for the consultation of interested stakeholders, justifying the reasons for the reduction of forest area and giving evidence of having evaluated the comments received from stakeholders.
Scope for improvement	Implementation and updating of databases on the extent of forest areas and related parameters.
Example of a source of detection and information	National and/or regional forest inventories, forest and land-use maps, aerial photographs, satellite images, cadastre, forest management plans, or equivalent sources.

Indicator 1.1b	Changes in the total volume of woody mass (adopted as a first approximation and provisionally also as an indirect indicator of the total fixed carbon stock), in the average volume of woody mass of forest areas (classified, if appropriate according to the different vegetation zones or classes), in the chronological classes or appropriate diametric distribution classes.
Type of indicator	Mandatory

Measurement Parameters	Average wood yield of the forest:_____mc/ha. Variation:____% in__years Total wood yield in the forest_mc. Variation:_% in_____years Total coppice wood supply:__cubic meter, stacked cubic meter or ton, or if not available as utilised area Variation:___% in__years
Criticality threshold	Mass values consistent with the management plan or the reference forest type.
Scope for improvement	Pursuit of the woody mass deemed optimal for the proper functioning of the ecosystem.
Example of detection and information source	Forest management plans or their equivalent.

Indicator 1.1 c	Implementation of positive climate practices
Type of indicator	Informative
Measurement Parameters	Identification of positive climate practices implemented by the organisation in the management operations, such as silvicultural practices to increase carbon sequestration (afforestation, shift elongation, coppice-to-woodland conversion), the reduction of climate-altering gas emissions (such as the implementation of fire-fighting activities), the efficient use of resources and the non-energy evaluation of by-products resulting from management (such as brushwood, bark, low-quality timber), without prejudice to the need or opportunity to release them into the forest.
Example of detection and information source	Forest management plan or its equivalent at company, inter-company or higher planning level. Presence of surveying and recording of management interventions.

GL 1.2 Forest conversion to agricultural use shall not occur. Forest conversion to other land use shall not occur unless in justified circumstances where conversion:

- complies with applicable national and regional land use and forest management policy and legislation and must be the result of national or regional spatial planning issued by a government or other official authority including consultation with relevant stakeholders;
- affects a small portion (no larger than 5%) of the forest category within the certified area;
- not have a negative impact on ecologically important forest areas, such as culturally and socially significant areas, or other protected areas;
- does not destroy areas with significantly high carbon stocks;
- contributes to long-term conservation, economic and social benefits.

GL 1.3 The transformation of ecologically important non-forest ecosystems after 31 December 2010 through reforestation and afforestation with forest plantation is not permitted and are not eligible for certification unless in justified circumstances. In any case, the change of use:

- must be in accordance with national and regional policy and legislation applicable at all levels for land use and forest management and must be the result of spatial planning, as defined by current regulations;
- must be established through a transparent decision-making process based on the active participation of the relevant stakeholders;
- must not have a negative impact on threatened or protected non-forest ecosystems as well as culturally and socially significant non-forest areas;
- must affect a minority portion of an ecologically important non-forest ecosystem managed by an organisation;
- must not affect areas with significantly high carbon stocks;
- must contribute to the long-term preservation of economic and social benefits.

Indicator 1.3 a	Afforestation
Type of indicator	Informative
Measurement Parameters	Area affected by afforestation:_____ha
Scope for improvement	Assessment of afforestation opportunities. Monitoring of natural colonisation situations by the forest.
Example of detection and information source	Management plans, inventories, aerial photographs, documentation of interventions carried out, direct verification, or equivalent sources.

LG 1.4 Human-induced forest degradation shall not occur.
Note 1: Plantation forests established by converting primary forest or naturally regenerating forests after 31 December 2010 are not eligible for certification.
Note 2: Planted forests established by converting primary forest after 31 December 2010 are not eligible for certification
Note 3: This requirement is not applicable for plantation forests established for protection or ecosystem restoration, as well as forests established through planting or seeding which at stand maturity resemble or will resemble naturally regenerating forests

GL 1.5 Management plans, or their equivalents (see 3.1) appropriate to the size and use of the forest area, must be drawn up and periodically updated. They must be based on existing legislation as well as existing land use plans, and appropriately include forest resources and biodiversity protection. Monitoring of forest resources and evaluation of their management must be carried out periodically; the results should contribute (as feedback) to the planning process

CRITERION 2

MAINTAINING THE HEALTH AND VITALITY OF FOREST ECOSYSTEMS

GL 2.1 Forest management practices must make the best use of natural structures and processes and take preventive biological measures, whenever and for as long as economically feasible, to maintain and improve forest health and vitality. Adequate genetic, species and structural diversity must be encouraged and/or maintained to improve the stability, vitality and resilience of forests to adverse environmental factors and to strengthen natural regulatory mechanisms.

Indicator 2.1 a	Serious damage caused by biotic and abiotic agents: serious damage caused by insects and diseases with an assessment of the severity of the damage as a function of mortality or decline in growth; annual area of forest and other wooded land affected by fire; annual area affected by wind and snow damage, and the woody volume resulting from these events; presence of serious damage to the forest caused by game; presence of serious damage to the forest caused by grazing.
Type of indicator	Mandatory
Measurement Parameters	Presence/absence of an up-to-date registration system and/or catalogue of biotic, abiotic, man-made or unknown adversities.
Criticality threshold	Presence of a registration system and/or up-to-date catalogue of biotic, abiotic, man-made or unknown agent adversities.
Scope for improvement	Integration of the registration system with planning and monitoring tools. Adoption of silvicultural techniques and management practices that favour adequate specific and structural diversity so as to improve forest stability, vitality and resilience.

Indicator 2.1 b	Coppice diversification: release of areas excluded from coppicing
Type of indicator	Mandatory
Measurement Parameters	Ratio of uncut, thinned, high-stemmed areas to total managed coppice areas
Criticality threshold	At least 10% coppiced areas in the presence of reduced fertility, presence of valuable trees, habitat trees, morphological emergencies (localised reliefs) or incisions (sides of ditches) unless otherwise prescribed by the planning instrument and exceptions adequately justified. Indicator only applicable for pooled areas larger than 100 ha NB: this indicator is not applicable to chestnut and robinia formations
Scope for improvement	Increased issuance per certification renewal

Indicator 2.1 c	Group or mixed standard (groups, small groups -even 3 subjects- and individual subjects)

Type of indicator	Mandatory
Measurement Parameters	1. Positioning the freshers 2.Shape of Single Freshmen
Criticality threshold	1.The location of the standards must favour the vegetation growth and reduce the visual impact of the intervention 2. Single freshmen must look as well-shaped as possible
Scope for improvement	Not applicable

GL 2.2 Appropriate forest management practices must be used, such as the use of natural regeneration (reforestation and afforestation only with tree species and provenance that are suitable for the site conditions), silvicultural operations and utilisation and extraction techniques that minimise damage to trees and/or soil, and fire prevention measures. Spills during forest management operations and indiscriminate dumping of waste in the forest must be strictly avoided. Emergency procedures for the minimisation of risk of environmental harm arising from the accidental spillage must be in place.
Non-organic waste and litter must be collected, stored in designated areas and removed in an environmentally responsible manner.
The use of fire must be limited to regions where fire is an essential tool in forest management for regeneration, wildfire protection and habitat management or a recognised practice of indigenous peoples. In these cases, adequate management and control measures shall be taken.

Indicator 2.2 a	Presence of an administrative framework on the ability to maintain the health and vitality of forest ecosystems. Presence of systems for recording and monitoring the use of pesticides and fertilisers as a prerequisite for minimising their use. (see indicator 5.3.a) Description of the surveillance system for the protection of forests from illegal activities and their reporting to the competent authority. Presence of activities aimed at preventing fires from breaking out, with the exception of the practice of prescribed fires.
Type of indicator	Mandatory
Measurement Parameters	Management plan or equivalent Registration and monitoring systems for pesticide and fertiliser use as a prerequisite for minimising their use Presence of the surveillance system
Criticality threshold	Presence of parameters
Scope for improvement	Adoption of accident prevention measures, adoption of chemicals with low environmental impact and biodegradable or reduced permanence in the environment; adoption of guidelines for the restricted use of chemicals

Example of detection and information source	Forest management plan or its equivalent at company, intercompany or higher planning level Presence of records of fertiliser or chemical use.

GL 2.3 The use of pesticides and herbicides is not permitted in natural and semi-natural formations. except for justified phytosanitary reasons, excluding in any case those listed in Tables 1A and 1B of the WHO, and those whose derivatives remain biologically active and accumulate in the food chain, and any pesticides banned by international agreements.
For biotechnology and GMOs, a precautionary approach should be implemented, using them only after experimentation has shown that there are no impacts on the ecosystem.

GL 2.4 The use of fertilisers must be avoided in natural and semi-natural formations.

GL 2.5 On estates larger than 100 ha, where stability conditions and vegetation characteristics permit and where forest areas are absent, part of the coppice area must be transformed through forms of management that favour the formation of a structural mosaic.

CRITERION 3

MAINTENANCE AND DEVELOPMENT OF PRODUCTIVE FUNCTIONS IN FOREST MANAGEMENT (WOOD AND NON-WOOD PRODUCTS)

GL 3.1 Forest management activities must ensure the maintenance and/or improvement of forest resources in the context of local forest planning, also considering the general services provided by the forest.

Indicator 3.1 a	Percentage of forest area managed according to forest management plans (or equivalent planning instruments under regional/provincial regulations) in force, adopted or under revision. Forest properties larger than 100 ha must be managed according to a company forestry planning instrument, with the exception of low-intensity management, where the area of intervention with cut areas is less than 50 ha during the period of validity of the certificate. In this case, however, completion of the planning sheet (Annex 1) is required. For forest properties of less than 100 hectares, this is sufficient: the compilation of the simplified planning sheet (for forest properties > 50 ha) (Annex 2); the presence of higher-level general forestry planning; or the existence of a system for monitoring the maintenance of the forest area and the total forest stock (PMPF), or - *an* authorisation system for the interventions that are carried out (e.g. minutes of checks, cutting plans, infrastructure, etc.). Note 1: planning instruments are considered as such if they are subject to codified authorisation procedures, provided for by the regulations in force, and have been submitted to the competent body for approval, if the regulation so provides. Note 2: Adoption means the start of the plan approval process. In the absence of a response from the competent forest administration, within 90 days from the submission to it of the plan proposal or equivalent planning instrument, the same is considered adopted. Note 3: In the case of major disturbance events that lead to a substantial change in the state of the forest stands, a request for revision of the plan, the re-proposal of the plan from scratch that takes into account the changes made following the event, and the request for an administrative extension are admissible. Certification may also be considered valid with the changes described above, subject to evidence of the request made to the competent authorities.
Type of indicator	Mandatory

Measurement Parameters	Percentage of forest area managed according to forest management plans Percentage of forest area managed according to equivalent planning instruments
Criticality threshold	Presence of planning instruments
Example of detection and information source	Forest management plan or its equivalent at company, inter-company or higher planning level.

Indicator 3.1 b	Content of local forest planning
Type of indicator	Mandatory
Measurement Parameters	Presence in the forest management plan, or its equivalent at the company, inter-company or higher planning level referred to in indicator 3.1.a or in the regulations in force, of indications of: management objectives, the location (with mapping) and description of the resources to be managed and the areas designated for protective functions; modes of exercising silvicultural interventions, grazing and civic uses, as well as management activities related to the production of non-wood goods and recreational services (when these activities occur in the territorial area in question); productive capacity of forests and its evaluation; regulation, monitoring and control of non-wood forest products, including hunting and fishing (where these are the responsibility of the forest owner/manager and included in forest management); management directives for protected areas or special natural emergencies (including those reported in ind. 4.7.a), rare or endangered species (with reference to the documents where they are reported); protection of forest biodiversity; preservation, and where necessary, increase of an adequate proportion of rotting wood in the forest; analysis of past pest events, definition of treatment practices and silvicultural techniques to maximise ecosystem resistance to pests, weather events and fires; planning of the methods and timing of care interventions for juvenile stands (interim interventions); planning for the continuity of natural regeneration over time; identification of the widest possible range of products and services that can be derived from the forest, identification of management guidelines to consolidate its production guidelines for the management of individual trees or formations of high landscape value; maintenance of natural habitats for biodiversity;

	creation and maintenance of forest resource inventories and maps that are adapted to local and national conditions; maintaining and increasing the health and vitality of the forest and improving degraded ecosystems, through appropriate silvicultural measures and, if possible, by acting on the causes of degradation; minimising the risk of degradation and damage to forest ecosystems.
Criticality threshold	Presence and compliance with the measurement parameter.
Scope for improvement	Supporting local forest planning with accurate and up-to-date inventory and mapping tools
Example of detection and information source	Forest management plan or its equivalent at company, inter-company or higher planning level.

GL 3.2 The quality of forest management activities must be ensured, with the aim of maintaining and improving forest resources and encouraging diversified production of goods and services in the long term.

Indicator 3.2 a	Amount of products and services provided by the forest
Type of indicator	Informative
Measurement Parameters	Examples of forest products (timber, game in the case of direct management, chestnuts, truffles, fruits of the undergrowth, honey, medicinal plants, cork, mushrooms for food use, charcoal, Christmas trees, etc.) and ecosystem services, if of interest. Average annual quantity of wood mass produced, broken down by assortment type, with reference to the last few years: Number of licences/authorisations issued annually for the collection/harvest (indicate the non-wood product to which it refers)____with reference to the last n__years: Percentage of corporate forest area permanently allocated as hunting reserve:___ _____.
Scope for improvement	The production of woody and non-wood goods and services must tend not to decrease over time, compatible with local socio-economic conditions and environmental protection. The collection of information on the goods and services produced by the forest in the forest planning and administration documents at company or group level must be enhanced.
Example of detection and information source	Local forest inventories; forest management plan or its equivalent at company, intercompany or higher planning level; certificates from regional forestry services; specific studies and local case studies; interviews; company administrative documents; equivalent sources.

GL 3.3 The quantitative level of utilisation of forest products, both wooden and non-wood, shall not exceed a rate that can be continuously harvested in the long term and shall not damage the natural regeneration and replenishment capacity of the products. Optimum use must be made of the harvested products.
For the harvesting of wood products on properties larger than 100 ha the reference period for verifying sustainability is 10 years or as long as the forest management plan or other equivalent planning instrument.

Indicator 3.3 a	Balance between increase and utilisation of wood mass in recent years:
Type of indicator	Mandatory
Measurement Parameters	In forests: Average annual current increase_____mc. Average annual current increase implemented__mc. In coppice: Annual average increase (or annual average current)_____in ton, cubic meter or stacked cubic meter. Average annual current implemented_in ton, cubic meter or stacked cubic meter, or Annual planimetric recovery implemented___in ha.
Criticality threshold	Within a given company property or the set of small properties within a territorial area, the following applies: In the case of forest stands, at the level of individual stands, the removal must not exceed 80% of the current increase in woody mass, unless otherwise prescribed (e.g. linked to cultivation objectives, sink capacity, vulnerability to disturbances and climatic crisis) that may be established by the forest management plan as per indicator 3.1.a. and 3.1.b., or by extraordinary cuts authorised according to regional/provincial procedures. In the case of coppice, the average value in recent years of the fraction of the area annually utilised compared to the total coppice area must be no greater than 1/T, where T = the minimum rotation provided for by the regional forestry regulations in force (in years), unless otherwise established by the forest management plan referred to in indicator 3.1.a. and 3.1.b, or by extraordinary cuts authorised according to regional/provincial procedures. Alternatively, the average value of the ratio between increment and average annual removal must be no less than 1.
Example of detection and information source	Local forest inventories; forest management plan or its equivalent at company, intercompany or higher planning level; certificates from regional forest services, or equivalent sources.

GL 3.4 Operations to cultivate the forest and utilise the products that can be extracted must be carried out in a manner and timeframe that does not reduce the productive capacity of the forest stands involved and favouring techniques with a reduced environmental impact, in relation to the

specific operating conditions, also considering the aesthetic aspects and all the services linked to the presence of the forest.

Indicator 3.4 a	Removal of woody biomass
Type of indicator	Mandatory
Measurement Parameters	Forest utilisations that foresee the removal of whole trees from the forest (*whole-tree-harvesting*) are allowed, unless otherwise prescribed in the planning instrument or in the felling project or check report. In any case, the release of a fraction of the biomass is compulsory, with particular reference to the youngest woody parts in which mineral elements are concentrated, unless otherwise prescribed by forest fire regulations. At the time of utilisation in a coppice-managed forest with an average slope of more than 50 per cent, utilisation residues must be uniformly released in the cutting area. The uprooting and removal of root systems is not permitted, except in cases of phytosanitary emergencies or natural disasters.
Criticality threshold	Presence of measurement parameter.
Scope for improvement	Identification of operational methods to quantify the amount of biomass released in the forest.
Example of detection and information source	Local forest inventories; specific studies and local case studies; interviews; evidence from regional forest services; equivalent sources.

Indicator 3.4 b	Forest utilisation techniques
Type of indicator	Mandatory
Measurement Parameters	Use of biodegradable chainsaw oils and identification of at least one new strategy to be implemented to contain environmental impacts on forest ash (use of alkylate petrol, use of biodegradable mechanical fluids, use of wheeled vehicles with enlarged sections, use of cableways/cranes, suspension of use during certain periods, use of combined operating machines if suitable for the operational, managerial and organisational context, release of brushwood on the fall bed during the works to mitigate damage from woodcutting, etc...) to be implemented gradually in the first five years of certification and maintained in subsequent years.
Criticality threshold	Presence of measurement parameter.
Scope for improvement	Low-impact intervention strategies must be consolidated over time
Example of detection and information source	List of strategies already implemented and potentially implementable; logging projects, forestry and environmental rehabilitation projects, certificates from regional forestry services; specific studies and local case studies; interviews; equivalent sources.

GL 3.5 Infrastructure, such as roads, bridges and logging tracks, must be planned, constructed and maintained in such a way as to ensure the efficient distribution of goods and services, while minimising negative impacts on the environment.

Indicator 3.5 a	Forest road density
Type of indicator	Mandatory
Measurement Parameters	Total length Density (linear meter/ha) of forest roads.
Criticality threshold	Presence of measurement parameter
Scope for improvement	Presence of forest road mapping. The forest road network must be compatible both with an efficient utilisation of the goods and services produced by the forest and with the hydrogeological, landscape, phytosanitary and faunal structure of the ecosystems concerned.
Example of detection and information source	Forest road plan, local forest inventories; technical and thematic mapping; forest management plan or its equivalent at company, intercompany or higher planning level; specific studies and local case studies; certificates from regional forest services; equivalent sources.

Indicator 3.5 b	Characteristics of forest roads
Type of indicator	Mandatory
Measurement Parameters	The layout of new forest roads and main forest tracks must be adapted to the microtopography of the territory and must minimise alterations to water flow, soil erosion and degradation processes. Presence/absence of a monitoring system of the state of the silvopastoral road system capable of guaranteeing the maintenance of forest roads, which must be carried out with techniques and materials that reduce their impact on the hydrogeological and landscape structure.
Criticality threshold	Presence of measurement parameters.
Scope for improvement	Presence of a forest road plan indicating optimal construction and maintenance methods of forest roads and tracks from the point of view of hydrogeological and landscape structure and from the point of view of the possibilities of ordinary use by local operators. Set-aside of the secondary tracks, with levelling of the furrows and insertion of small transversal barriers (e.g.: brushwood, utilisation residues, furrows…) to avoid damage caused by water run-off.
Example of detection and information source	Forest road plan, local forest inventories; technical and thematic mapping; forest management plan or its equivalent at company, intercompany or higher planning level; specific studies and local case studies; certificates from regional forest services; equivalent sources

CRITERION 4

MAINTENANCE, CONSERVATION AND APPROPRIATE ENHANCEMENT OF BIOLOGICAL DIVERSITY IN FOREST ECOSYSTEMS

Indicator 4.1 a	Proportionality of the annual area of natural regeneration in relation to the total area under regeneration.
Type of indicator	Mandatory
Measurement Parameters	Total area in regeneration (ha) _____ of which % _____ in natural regeneration and % _____ in artificial regeneration.
Criticality threshold	The forest area under artificial regeneration must not exceed 30 % of the total forest area undergoing regeneration, unless justified and documented technical reasons are given.
Scope for improvement	Favour and implement natural regeneration in management models throughout the territory, taking care to ensure the perpetuity of the forest. Recourse to artificial or artificially assisted regeneration, unless otherwise indicated in the forest management plan, should only be adopted where natural regeneration is impossible, due to pathological reasons or to serious damage caused by biotic and abiotic adversities, for which timely restoration is not possible, and using, where possible, autochthonous propagation material of certified or known provenance.
Example of detection and information source	Forest management plans of various types (company, intercompany or higher level. Direct verifications, or equivalent sources. Cutting projects.

Indicator 4.2 a	Differentiation between native and introduced species.
Type of indicator	Mandatory
Measurement Parameters	Number of introduced species and their % in relation to the tree composition of the stand present with reference to the number of plants or area. (Does not apply to tree formations with introduced/non native species planted for experimental purposes)
Criticality threshold	Introduced non-native species in future afforestation/reafforestation must not lead to an increase in the area of non-native species of more than 5% over the period of the plan's validity and in any case not exceeding 30% of the entire farm area, unless indicated in the management plan and equivalent planning instruments.
Scope for improvement	For existing stands of introduced species, the GF should aim at the gradual establishment of ecologically compatible stands with the site.
Example of detection and information source	Forest management plans of various types (company, intercompany or higher level), specific surveys and studies, forest inventories or maps, specific projects. Direct verifications, or equivalent sources.

Indicator 4.2 b	Quality of propagation material
Type of indicator	Mandatory
Measurement Parameters	Use of material of certified or known origin
Criticality threshold	Exclusive use of material of certified or known origin.
Example of detection and information source	Forest management plans of various types (company, intercompany or higher level) Direct verification, specific projects or equivalent sources

Indicator 4.2 c	Maintaining appropriate biological diversity in reforestations
Type of indicator	Mandatory
Measurement Parameters	Composition of afforestation Preservation of any existing trees, groups of trees or strips of shrub vegetation and the adoption of appropriate measures to encourage their growth and development.
Criticality threshold	Prohibition of single-species afforestation, except under special conditions that do not allow the use of two or more species and with justification. The main species may not exceed 75 per cent of the specific composition, except for reforestation cores of less than 5,000 m². Presence of natural vegetation strips
Example of detection and information source	Forest management plans of various types (company, intercompany or higher level) Direct verification, specific projects or equivalent sources

Indicator 4.3 a Indicator 4.3 b	Changes in the proportion of mixed forests consisting of 2 or more species Changes in the proportion of non-monostratified mixed forests
Type of indicator	Mandatory
Measurement Parameters	Forest area covered by mixed forests (tree composition of 2 or more species) ha and percentage of total forest area %. Forest area covered by non- monostratifiede forests ha and percentage of total forest area
Criticality threshold	The forest area covered by forest types that are ecologically consistent in composition and structure with the site must be more than 50 per cent of the total.
Scope for improvement	Aiming to improve the tree composition of the stand in relation to the most appropriate forest type for the forest site, favouring, where possible, multi-species and multi-layered silvicultural models, favouring rare tree species.

Example of detection and information source	Forest management plans of various types (company, intercompany or higher level)

GL 4.4 Forest infrastructures and activities must be planned and conducted in such a way as to minimise damage to ecosystems, especially ecologically important forest areas, endangered species and other significant species - in particular migratory wildlife trails.

Indicator 4.4 a	Guidelines or prescriptions for forest utilisation activities and the construction of infrastructure in ecologically important forest areas, where such ecosystems are present
Type of indicator	Mandatory
Measurement Parameters	Presence of directives or prescriptions for forest utilisation activities and the construction of infrastructures in rare, sensitive or representative ecosystems, where such ecosystems are present, as identified in the various institutive measures.
Criticality threshold	Presence of measurement parameters.
Example of detection and information source	Forest management plan or its equivalent at company, intercompany or higher planning level, existing national or local wildlife censuses, specific studies, floristic surveys, bibliographic references in relation to the identified forest types, or equivalent sources.

Indicator 4.4 b	Measures to safeguard fauna during forestry operations
Type of indicator	Mandatory
Measurement Parameters	Provision of measures to limit or suspend silvicultural activities during the breeding period of animal species indicated in national and regional red lists, where similar regulatory requirements are not already present in other regulatory instruments.
Criticality threshold	Presence and compliance with the measurement parameter
Scope for improvement	Forest Management Plans must contain a wildlife report that takes into account the possible impact of silvicultural interventions on wildlife species of special conservation interest. Monitoring of wildlife species.
Example of detection and information source	National Red Lists

GL 4.5 With due consideration for management objectives, measures must be taken to balance the pressure of domestic and wild animal populations on forest regeneration, growth, and biodiversity.

Safeguards must also be provided for rare, threatened and endangered species and their *habitats*, as well as for all species that are important for fauna feeding.

Indicator 4.5 a	Monitoring and damage control of wild animal populations
Type of indicator	Mandatory
Measurement Parameters	Monitoring and damage control in the forest
Criticality threshold	Presence of measurement parameters.
Scope for improvement	Refining and improving the effectiveness of monitoring tools
Example of detection and information source	Forest management plans and equivalent; direct surveys or equivalent sources

Indicator 4.5 b	Domestic animal grazing in the forest
Type of indicator	Mandatory
Measurement Parameters	Number of domestic animals grazing in forest per unit area: (in Unit of bovine per area). Number of months grazing in the forest_____
Criticality threshold	Compliance with regulatory requirements and planning instruments.
Scope for improvement	Achieving a load compatible with the forest type present and its renewal, functionality and diversity of forest ecosystems
Example of detection and information source	Forest management plans at company, intercompany or higher district level, Direct verification or equivalent sources

Indicator 4.6 a	Dead, monumental, historical and rare and sporadic species trees
Type of indicator	Mandatory
Measurement Parameters	Monumental trees belonging to rare and sporadic species, indication of species and estimate in no. or per unit area. Presence of standing dead trees and dead wood on the ground.
Criticality threshold	Release of monumental trees of rare and sporadic native species. Exceptions are permitted, with justified reasons, for sporadic species. Release of standing dead trees and dead wood on the ground, taking into account the safeguard of biological diversity and the potential effect on the health and stability of forest and sourronding ecosystems.
Example of detection and	Forest management plans at company, intercompany or upper district level, park environmental plans or forest management plans, forest inventories Natural monument databases, Direct verification or equivalent sources

information source	Rare and sporadic species for the context: as per regional regulations, if present. IUCN Red Lists

Indicator 4.6 b	Areas not subject to cutting, intended for free evolution.
Type of indicator	Mandatory
Measurement Parameters	Area released for free development:_(ha) Reasons for the choice of free evolution
Criticality threshold	Presence of surface area for free evolution.
Example of detection and information source	Forest management plans at company, intercompany or upper district level, park nature plans or Natura 2000 network management plans. Direct verifications

Indicator 4.7 a	Presence of old forests and wetlands (e.g. peat bogs) and their management
Type of indicator	Mandatory
Measurement Parameters	Marking the presence of areas covered by ancient forests and wetlands. Management must use techniques that avoid damage to ancient forests and wetlands.
Criticality threshold	Presence of specific standards or measures for the areas covered by the indicator
Scope for improvement	Forest management must avoid damaging areas of monumental forests and wetlands.
Example of detection and information source	Forest management plan or its equivalent at company or inter-company level; specific studies or equivalent sources.

Indicator 4.8 a	Silvicultural and planning guidance on forest utilisation
Type of indicator	Mandatory
Measurement Parameters	Prescriptions regarding silvicultural operations (final cuts, inter-cutting and care of all phases of forest development) and utilisation methods (timber concentration and extraction) within forest management plans or equivalent planning instruments pursuant to regional regulations and forest cutting or reforestation projects.
Criticality threshold	Presence of and compliance with these requirements
Example of detection and	Forest management plans at company, intercompany or higher district level. Direct verifications. Forest cutting or reforestation projects. General regulations, PMPFs. Any other source equivalent to those mentioned above.

information source	

Indicator 4.8 b	Preservation of ecologically important forest areas and endangered species
Type of indicator	Mandatory
Measurement Parameters	Presence of rare, threatened or endangered species
Criticality threshold	Mapping of ecologically important forest areas and endangered species
Example of detection and information source	Natura 2000 network, specific studies on biodiversity

Indicator 4.8 c	Inventory, mapping and planning of forest resources with a focus on ecologically important areas
Type of indicator	Mandatory
Measurement Parameters	Inventories and mapping of ecologically important areas. Presence of prescriptions or methods of intervention in forest utilisation to identify, safeguard and protect rare species and their habitats of high ecological value (see 4.8.b), including through the identification of non-cut areas (see 4.6.b)
Criticality threshold	Presence of and compliance with these requirements
Example of detection and information source	Forest management plans or equivalent planning instruments. Forest cutting or reforestation projects. General regulations, PMPFs. Any other source equivalent to those mentioned above

CRITERION 5

MAINTAINING AND APPROPRIATELY IMPROVING THE PROTECTIVE FUNCTIONS OF FOREST MANAGEMENT (WITH SPECIFIC ATTENTION TO SOIL PROTECTION AND WATER REGULATION)

GL 5.1 The protective functions of forests for society including their ability to mitigate erosion, prevent flooding, purify water, regulate climate, sequester carbon and other regulatory or supporting ecosystem services must be maintained or enhanced.

Indicator 5.1 a	Availability of forest thematic mapping depicting the prevailing function of forested areas, with particular emphasis on the protective function
Type of indicator	Mandatory
Measurement Parameters	Cartographic files at a scale appropriate for planning and management purposes indicating which wooded areas are of predominant interest for soil protection, water quality and the possible direct protection of infrastructure.
Criticality threshold	Presence of hydrogeological constraint mapping or other representation of the protective function of the forest.
Example of detection and information source	Cartographies of company and inter-company forest management plans, forest inventories, thematic maps of soils, hydrogeological instability maps, basin plans, forestry records, etc. Any other source equivalent to those mentioned above.

Indicator 5.1 b	Extent of forest area managed for protection purposes and its changes over time
Type of indicator	Informative
Measurement Parameters	Forest area under protective restrictions ha, its % of the total forest area %
Scope for improvement	Developing tools for monitoring the protective function of forests
Example of detection and information source	Forest management plans at company, intercompany or upper district level. Direct verifications. Forest cutting or reforestation projects, etc. Any other source equivalent to those mentioned above.

Indicator 5.2 a	Silvicultural operations in forests
Type of indicator	Mandatory
Measurement Parameters	Clear-cutting and ground cover in forests
Criticality threshold	In forest stands, clear cutting on areas exceeding ½ hectare is forbidden, except in cases where it is indispensable for the natural regeneration of the forest or its

	application for this purpose is expressly indicated in the duly approved management plan or equivalent planning/authorisation instruments or for phytosanitary purposes.
Scope for improvement	No cutting during the late spring/summer nesting period - biological standstill
Example of detection and information source	Forest management plans or equivalent planning instruments pursuant to regional/provincial regulations or equivalent sources (see indicator 3.1.a).

Indicator 5.2 b	Silvicultural operations in coppice forests
Type of indicator	Mandatory
Measurement Parameters	Cutting width in coppices in ha
Criticality threshold	In coppices located in areas with an average slope equal to or greater than 80 per cent, simple coppicing is prohibited, unless otherwise prescribed in the management plan, or equivalent planning instruments. In coppices located in areas with an average slope between 50% and 80% the bundled area subject to cutting must not exceed 2 ha on highly erodible soils, 5 ha in other cases. On average slopes of less than 50% the bundled area subject to cutting must not exceed 10 ha, without prejudice to any different prescriptions provided for by the duly approved management plan, or equivalent planning instruments.
Scope for improvement	In regions where regulations do not indicate a cutting period, a period is defined according to the physiological characteristics of the forest species and nesting periods.
Example of detection and information source	Forest management plans or equivalent planning instruments according to regional/provincial regulations or equivalent sources (see indicator 3.1.a).

Indicator 5.2 c	Management differentiation in coppice-managed forests
Type of indicator	Informative
Measurement Parameters	Presence and ratio of areas of managed coppices (under management), intended for ageing, in start-up to high forest (public ownership and merged private ownership)
Example of detection and information source	Forest management plan or its equivalent at company, inter-company or higher planning level.

Indicator 5.2 d	Soil working in forest areas
Type of indicator	Mandatory

Measurement Parameters	Assessment of the nature of the soil work performed or the operations carried out on the litter, topsoil or turf.
Criticality threshold	There must be no tilling of the soil and no widespread harvesting of litter, topsoil or turf. This is without prejudice to any different prescriptions laid down in the forest management plan referred to in Ind. 3.1.a or interventions authorised under current procedures.
Example of detection and information source	Forest management plan or its equivalent at company, inter-company or higher planning level. Legislation and regulations at local level. Survey and registration of the operations in question. Any other source equivalent to those mentioned above.

Indicator 5.2 and	Criteria for carrying out timber gathering and extraction
Type of indicator	Mandatory
Measurement Parameters	Directions for regulating the way in which timber is concentrated and removed in order to take due account of the need to avoid damage to soil, standing trees and regeneration.
Criticality threshold	Presence and observance of guidelines to regulate the way in which timber is concentrated and removed in order to take due account of the need to avoid damage to soil, standing trees and regeneration.
Example of detection and information source	Forest management plan or its equivalent at company, inter-company or higher planning level, regional and local regulations. Logging or environmental redevelopment projects, local prescriptions and plans, minutes of checks or equivalent sources.

Indicator 5.3 a	Silvicultural treatments in protective forests
Type of indicator	Mandatory
Measurement Parameters	Management recommendations aimed at maximising the protective function.
Criticality threshold	Presence and compliance with the parameter
Scope for improvement	Monitoring/recording of events caused by biotic and abiotic adversities.
Example of detection and information source	Forest management plan or its equivalent at company, inter-company or higher planning level, regulations and rules at local level, projects of works in progress and carried out in the last decade with the aim of increasing or integrating the protective efficiency of the forest. (see indicator 3.5.b for forestry and pastoral road works)

CRITERION 6

MAINTENANCE OF OTHER FUNCTIONS AND SOCIO-ECONOMIC CONDITIONS

6.1. Forest management planning must aim to respect the multiple functions of forests for society, have a special regard for the role of the forestry sector in rural development and the local economy, especially considering new training and employment opportunities related to the socio-economic functions of forests and their active sustainable management.

Indicator 6.1 a	Implementation of activities with positive direct and indirect employment impacts
Type of indicator	Informative
Measurement Parameters	Total number of employees in the organisation no. _and change in recent years . Percentage of employees of the organisation employed on a part-time basis out of the total number of employees %. Operation and maintenance and investment works carried out under direct administration: annual work units. Operation and maintenance and investment work carried out by third parties: annual work units. Quantification of the temporal integration of forestry work between winter utilisation in coppice and thinnings in stands converted to tall trees in the summer period
Example of detection and information source	Interviews, public consultation, direct control; company balance sheets; insurance and social security reports or equivalent sources.

Indicator 6.2.a	Evaluation system of socio-economic functions of interest to the individual organisation and the community at large.
Type of indicator	Informative
Measurement Parameters	Evaluation of the socio-economic functions of companies and the local community: woody and non-wood production.
Scope for improvement	Consideration of non-commercial products and direct use by owners and rights holders.
Example of detection and information source	Specific studies, accounts, direct interviews or equivalent sources. General and/or local reference standards.

Indicator 6.3 a	Evidence and protection of property rights, possession agreements and other forms of use, with particular regard to the correct definition of property limits, possible rights of civic use and the definition of inheritance processes
Type of indicator	Mandatory

Measurement Parameters	Documentation and/or cartography evidencing rights of ownership, possession, or other forms of use of forest land.
Criticality threshold	Presence of and compliance with the directions contained in the regulations on the use of collective rights.
Scope for improvement	Integrate mapping as far as possible: in particular in the forest management plan or similar documents, clearly identify publicly and privately owned forest areas.
Example of detection and information source	Property contracts and leases. Interviews, public consultation, direct control. Forest management plan, similar or equivalent documents.

Indicator 6.4 a	Amount of forests with public access for recreational purposes
Type of indicator	Informative Pursuant to the relevant articles of the Civil Code, all public and private unfenced land is subject to right of way and repassing
Measurement Parameters	Area of forests with public access for recreational purposes ha and its %__of total area
Scope for improvement	Presence of accessibility improvement projects, Cartography of sites
Example of detection and information source	Forest management plan. Interviews, public consultation, direct control.

Indicator 6.5 a	Historical cultural and spiritual forests
Type of indicator	Mandatory
Measurement Parameters	List or evidence of sites with historical cultural or spiritual value and their protection.
Criticality threshold	Presence of the parameter and planned protection measures
Scope for improvement	Knowledge projects on the historical, cultural and spiritual characteristics of the area; Cartography of sites.
Example of detection and information source	Forest management plan. Interviews, public consultation, direct control. Specific lists or registers.

GL 6.6 Local forestry experience and knowledge, as well as innovations and good practices promoted by forest owners and managers, non-governmental associations, and local communities must be valorised. Benefits from the application of such knowledge shall be equitably distributed.

Indicator 6.6 a	Management interventions with social value and evaluation of local forestry experience and knowledge, innovations and good practices.
Type of indicator	Mandatory
Measurement Parameters	The organisation records management interventions with a social value, taking into account the various stakeholders related to forest management. The organisation records interventions to enhance local forestry experience and knowledge, as well as innovations and good practices.
Criticality threshold	Presence of the parameter
Scope for improvement	Evaluation of actions to be taken in order to improve information and communication with stakeholders
Example of detection and information source	Interviews, direct verification, public consultation or equivalent sources.

GL 6.7. Forest managers, contractors, employees and forest owners must be sufficiently informed and encouraged to keep up to date with sustainable forest management through continuous training. In addition, special attention must be paid in general to training, further training, information and other social services for workers and the local community. All actors involved in certification (individually or as members of GRs or GTs) are responsible for ensuring that the activities and operations of subcontractors comply/meet the criteria and indicators of the GFS

Indicator 6.7 a	Training and further education
Type of indicator	Mandatory
Measurement Parameters	Evidence and documentation of the training and further training of organisations and companies carrying out utilisation and cultivation activities.
Criticality threshold	Presence and compliance with the measurement parameter according to the requirements of current regional and provincial regulations.
Scope for improvement	Respect of the measurement parameter for all those involved in the execution of utilisation and cultivation care activities.
Example of detection and information source	Certificates/certificates in accordance with current legislation, with reference to TU 34/2018 and related implementing decrees. Certificates of competence of the ECC standard (European Chainsaw certificate - EFESC) are recognised as equivalent.

Indicator 6.7 b	Investment in vocational training

Type of indicator	Informative
Measurement Parameters	Average annual investment in vocational training in the forestry sector
Example of detection and information source	National and/or regional Forest Plan; Regional Forest Programme Rural Development Plan (EC Reg. 1257/99 and EC Reg. 1698/2005); Specific farm investments or equivalent sources.

Indicator 6.8 a	Accident prevention in companies carrying out works on a direct or contract basis
Type of indicator	Mandatory Note: In Italy, there is legislation in place to regulate aspects of worker safety in the workplace.
Measurement Parameters	Forest management operations must be carried out in such a manner to protect the health and safety of workers and other persons who may be present.
Criticality threshold	Use of PPE, in the cases provided for by the regulations in force. Signposting of construction sites, in cases provided for by the regulations in force.
Scope for improvement	Extension of the provisions for contract work also to standing sales The holder of the certification in the collective heritage undertakes to promote activities aimed at the dissemination of skills in the use of the chainsaw and/or felling for those who work in the forest in the exercise of civic use.
Example of detection and information source	Direct verification, interviews, documentary analysis or equivalent sources

Indicator 6.8 b	Safety education and training courses if relevant
Type of indicator	Mandatory
Measurement Parameters	Attendance at safety education and training courses
Criticality threshold	Documentary evidence of sufficient security training
Scope for improvement	Competence and training of management and operations personnel are taken into account and improved.
Example of detection and information source	Registrations, certificates of participation.
Indicator 6.8 c	Accident statistics

Type of indicator	Informative
Measurement Parameters	Register with number of accidents at work in the organisation and % change over the last n. years

Indicator 6.9.a	Forest Improvement Fund
Type of indicator	Mandatory
Measurement Parameters	Part of the proceeds from the sale of forest products by public landowners is reinvested in resource enhancement measures to guarantee the multiple functions performed by the forest and in activities and interventions aimed at maintaining the forest's capacity to offer products and/or services of public interest.
Criticality threshold	In public forests, at least 10 per cent of the expected revenue from the sale of forest products is reinvested in forestry resource improvement measures.
Scope for improvement	In the area of public forest management, there should be an aim to increase the percentage.
Example of detection and information source	Structure budgets of the previous calendar year or equivalent sources

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Annex 1 - PLANNING SHEET - For properties over 100 ha with low management intensity

PEFC Forest Certification Sheet	
tab no.	

Organisation name	
Owner or delegate	

Municipality	
Natura 2000 sites (SCI SPA)	
Other protected areas	

Location	Altitude	Slope	Exposure	Lithological substrate
Renovation	Coverage%	coppice shift	coppice age	Roads

Cadastral surface area			surface		Management	Forest typology	structure		Composition		Wood mass		Inc %	Resumed period:		Utilisations	
Sheet	Cadastral unit	total (ha)	% wooded	% non-forested			type	%	(3 main species)	%	unit (q or m3/ ha)	total (q or m3)		Years period	Q or m3	year	total (q or m3)

TOTAL																	

interventions planned over the 5 years	
Interventions carried out in the previous 10 years	
Further information	

Cartography references	
Date	
Editor's signature	
Signature owner or delegate	

Annex 2 - SIMPLIFIED PLANNING SHEET - For forest properties between 50 and 100 ha in size

PEFC Forest Certification Sheet	
tab no.	

Organisation name	
Owner or delegate	

Municipality	
Natura 2000 sites (SCI SPA)	
Other protected areas	

Location	Altitude	Slope	Exposure	Lithological substrate
Renovation	Coverage%	coppice shift	coppice age	Roads

Cadastral surface area			surface		Management	Composition		Wood mass		Utilisations	
Sheet	Cadastral unit	total (ha)	% wooded	% non-forested		(3 main species)	%	unit (q or m3/ ha)	total (q or m3)	year	total (q or m3)

TOTAL											

interventions planned over the 5 years	
Interventions carried out in the previous 10 years	
Further information	

Cartography references	

Date	

Editor's signature	

Signature owner or delegate	

Annex 3 - Additional Criteria and Indicators for GFS Territorial Group Certification

CRITERION 1
MAINTENANCE AND APPROPRIATE ENHANCEMENT OF FOREST RESOURCES AND THEIR CONTRIBUTION TO THE GLOBAL CARBON CYCLE

Indicator 1.1 a	Legal-political-administrative framework on the protection and improvement of forest resources (particularly in relation to forest area and wood mass)
Type of indicator	Mandatory
Measurement Parameters	Availability of documentation on: National and/or regional regulatory framework Regional Forest Programme Financial and technical tools to support integration between forest planning and other spatial planning. Appropriate financial and technical instruments aimed at encouraging the achievement of wood mass levels suitable for the proper functioning of forest systems. Forms of authorisation or prescription for forest management
Criticality threshold	Presence of parameters
Scope for improvement	Improving the compatibility of regulations with the principles of ecological, economic and social sustainability of forest management.
Example of detection and information source	Specific laws or regulatory instruments. Regional Forest Programme or Plan, Rural Development Plan under Reg. 1257/99. Specific expenditure chapters of regional or national competence, EU funding lines

Indicator 1.1 b	Forest area, other wooded land and changes in area (classified, where relevant, according to forest and vegetation types, ownership structure, chronological classes, forest origin)
Type of indicator	Mandatory
Measurement Parameters	Forest area in ha. _____ % change _____ over the period of no. _____. Form of management: % _____ coppice; % _____ coppice; % _____ mixed management.
Criticality threshold	Reduction of forest area is not permitted (except in documented cases depending on management and planning policies and in cases where there is compensation according to law) Percentage change in forest area greater than or equal to zero.

Scope for improvement	Initiating the process of coppice conversion where ecologically, economically and socially possible or appropriate.
Example of detection and information source	National and/or regional forest inventories, forest and land-use maps, aerial photos, satellite images, cadastre, forest management plans.

Indicator 1.2 a	Availability of forest inventories, archives, maps, topographic and thematic maps, monitoring plans and descriptions of forest resources
Type of indicator	Informative
Measurement Parameters	Availability of cartographic and/or inventory documentation
Scope for improvement	Increase and development of inventory, monitoring and mapping tools according to national and European standards.
Example of detection and information source	Cartography, forest inventories, specific studies

1.3 Management plans, or their equivalent, appropriate to the size and use of the forest area, must be drawn up and periodically updated. They must be based on existing legislation as well as existing land use plans, and include forest resources as appropriate.
Monitoring of forest resources and evaluation of their management must be carried out periodically; the results must contribute (as feedback) to the planning process.

Indicator 1.3 a	Area under forest planning or equivalent (see also Ind. 3.1 b)
Type of indicator	Informative
Measurement Parameters	Percentage of planned area in relation to total forest area (possibly broken down by type of ownership).
Example of detection and information source	Forest management plans or equivalent

Indicator 1.3 b	Knowledge of the woody mass (adopted, as a first approximation and provisionally also as an indirect indicator of the total carbon stock set) of the forest areas (classified, if appropriate according to the different vegetation zones or classes), of the chronological classes or appropriate diametric distribution classes.

Type of indicator	Mandatory
Measurement Parameters	Currently available data
Criticality threshold	Presence of data
Scope for improvement	Improving the quality of information.
Example of detection and information source	National forest inventory, regional forest inventories, management plans and equivalents, regional forest statistics.

CRITERION 2
MAINTAINING THE HEALTH AND VITALITY OF FOREST ECOSYSTEMS

Indicator 2.1 a	Legal - political - administrative framework on maintaining the health and vitality of forest ecosystems
Type of indicator	Informative
Measurement Parameters	Regulatory framework to promote forest health and vitality. Programmes to control and monitor the presence of damaging agents and the occurrence of serious epidemics. Appropriate technical and financial instruments to avoid serious alteration of ecological processes. Additional means of information to monitor forest health and soil acidification. Forest management plans, or their equivalent, that specify ways and means to minimise the risks of degradation and damage to forest ecosystems.
Example of detection and information source	Specific laws or regulatory instruments, international protocols. National Forest Programme, Regional Forest Programme or Plan. Rural Development Plan under Reg. 1257/99, other EU funding lines, specific regional or national expenditure chapters; Specific studies conducted at national or regional level, forest fire plan, soil maps, inventories. Forest management plans or their equivalents, technical specifications, general prescriptions and forest police, forest regulations.

Indicator 2.2 a	Total deposition and/or exposure to air pollutants in forests and other wooded land. NOTES: Deposition is defined as total chemical *input* in forest ecosystems and is calculated by adding the *throughfall* and *stemflow* values corrected for absorption or release by leaves or needles; Exposure, defined by means of AOT40s, can be calculated from the data of passive samplers by means of appropriate models. These models must be made explicit; The evaluation of data on the basis of critical levels is one possibility to express the significance and implications of changes. The models applied, based on the available data, must be made explicit.
Type of indicator	Informative
Measurement Parameters	Chemical characteristics of atmospheric deposition of atmospheric concentrations of gaseous pollutants.
Scope for improvement	Activation and implementation of environmental monitoring and control programmes. Data may be taken into account as these programmes come into operation.

Example of detection and information source	The monitoring of atmospheric deposition of pollutants on forest ecosystems is carried out within national programmes. Locally, regional initiatives or those of individual research institutes may coexist.

Indicator 2.2 b	Crown condition and defoliation changes in forests and wooded areas, on one or more of the main tree species
Type of indicator	Informative
Measurement Parameters	Percentage of defoliated trees by damage class and species; defoliation statistical parameters. Variation in defoliation.
Scope for improvement	Homogenisation of data collection and display criteria across regions.
Example of a source of detection and information	The source of information is essentially the national Level I network. Locally, regional surveys may be available.

Indicator 2.2 c	Forests and other wooded land with damage caused by (1) abiotic, (2) biotic, (3) human-induced and (4) unknown causes, subdivided if possible according to the most important forest types. NOTES: Abiotic damage includes inter alia fire, wind and snow damage, landslides and avalanches. Specify when possible. Biotic damage includes among others: insects, fungi, grazing, game. Specify when possible. Human-induced damage includes, inter alia, mechanical damage from extraction and utilisation. Specify when possible. When more than one type of damage is present, indicate the prevailing category.
Type of indicator	Informative
Measurement Parameters	Presence of surveys and/or detection systems on damage by biotic agents (fungi, insects, grazing, game) and abiotic agents (fire, wind and snow damage, landslides and avalanches).
Scope for improvement	Activation and improvement of survey and detection systems where they are lacking.
Example of detection and	Level I network surveys; forest inventories, aerial photos, satellite images, forest management plans, wildlife plans, forest fire plans; permanent regional phytopathological inventories.

information source	

Indicator 2.2 d	State of soil chemical properties of forests and other wooded land, in relation to soil acidification and eutrophication, according to the main soil types.
Type of indicator	Informative
Measurement Parameters	pH value; C.S.C.; inorganic C/N.
Scope for improvement	Monitoring changes.
Example of detection and information source	The monitoring of soil conditions in forest ecosystems is carried out within national programmes. Locally, regional initiatives or those of individual research institutes may coexist. Existing national or regional soil maps.

CRITERION 3
MAINTENANCE AND DEVELOPMENT OF PRODUCTIVE FUNCTIONS IN FOREST MANAGEMENT (WOOD AND NON-WOOD PRODUCTS)

Indicator 3.1 a	Percentage of forest area managed in accordance with forest management plans or equivalent planning instruments according to regional regulations, in force or under revision (forest management plans, forest economic plans, summary forest management plans, forest reorganisation plans, silvicultural intervention plans, silvicultural improvement plans, multiannual cutting plans, detailed integrated plans, forestry files, etc.).
Type of indicator	Informative
Measurement Parameters	Percentage of forest area managed according to forest management plans: _____. Percentage of forest area managed according to equivalent planning instruments: ___. Percentage change in forest area managed according to forest management plans or equivalent planning instruments, with reference to the last n. _____ years: _____.
Scope for improvement	The percentage of forest area managed according to forest management plans or equivalent planning instruments should tend to increase over time.
Example of detection and information source	Forest inventories, regional statistics, regional administrative archives.

Indicator 3.1 b	Amount of forest products
Type of indicator	Informative
Measurement Parameters	List of forest products (timber, game, chestnuts, truffles, fruits of the undergrowth, medicinal plants, cork, mushrooms for food use): _____. Average annual quantity of wood mass produced, broken down by assortment type (working wood, fuel wood), with reference to the last n. _____ years: _____ Number of licences/authorisations issued annually for the collection/take of (indicate the non-wood product referred to) _____, with reference to the last no. _____ years: _____.
Scope for improvement	The production of woody and non-wood goods must tend not to decrease over time, compatible with socio-economic and environmental protection conditions. The collection of information on forest products in regional forest inventory, planning and administration documents must be strengthened.
Example of detection and	Forest inventories, ISTAT yearbooks, regional statistics, specific studies, certificates from regional forestry services, regional administrative archives.

information source	

Indicator 3.1 c	Legal-political-administrative framework on forest planning and management for the production of goods and services
Type of indicator	Mandatory
Measurement Parameters	MEASUREMENT PARAMETERS: Regulatory framework and specific financial instruments to encourage forest management planning and related implementation mechanisms in order to maintain and/or increase the capacity of forests to produce, on a sustainable basis, as diverse a range of goods and services as possible; to maintain efficiency and improve the economic performance of the forest production system and to foster integration between managers and/or producers and users and/or users in a broad sense; maintaining and/or increasing the wood production capacity of forests without triggering processes of degradation or impoverishment of ecosystems and ensuring appropriate fire protection. Regulatory framework and specific financial instruments able to encourage and regulate targeted forest management practices related to recreation and other forest services and harvesting/ harvesting of forest products listed in list 3.1.b. Regulatory framework and specific financial instruments capable of encouraging and regulating the planning, design, construction and maintenance of infrastructures to support surveillance, fire protection, management and utilisation of forest resources and to minimise their impact on the hydrogeological, landscape, phytosanitary and faunal structure of the ecosystems concerned.
Criticality threshold	Presence of parameters
Scope for improvement	Presence of all possibly deficient measurement parameters.
Example of detection and information source	Specific regional and national laws or measures; regional forestry programmes or plans or, in their absence, national forestry plan; development plans of Mountain Communities; specific expenditure chapters of regional and/or national competence; EU funding lines; rural development plans; regional forest fire plans; contractual agreements.

CRITERION 4

MAINTENANCE, CONSERVATION AND APPROPRIATE ENHANCEMENT OF BIOLOGICAL DIVERSITY IN FOREST ECOSYSTEMS

Indicator 4.1 a	Legal-political-administrative framework on the overall capacity to maintain, conserve and enhance biological diversity

Type of indicator	Informative
Measurement Parameters	Legal and regulatory framework, consistent with state and EU regulations, aimed at ensuring sustainable forest management. Capacity to maintain and/or increase the biodiversity of forest ecosystems by ensuring the multifunctionality of the forest. Economic/political context that can stimulate habitat knowledge by providing supporting information and inventory tools.
Scope for improvement	Presence of all measurement parameters Evaluation on the effectiveness of parameters
Example of detection and information source	Local and regional forestry laws or regulations aimed at ensuring sustainable forest management. Local and regional forestry laws or regulations (management plans, PMPFs, park environmental plans, etc.) capable of guaranteeing the capacity to maintain and/or increase the biodiversity of forest ecosystems by ensuring the multifunctionality of the forest. Specific expenditure chapters of regional or local competence. Community funding lines. Inventories, Forest Management Plans at company, intercompany or higher district level.

Indicator 4.2 a	Legal-political-administrative framework on representative, rare and vulnerable forest ecosystems
Type of indicator	Informative
Measurement Parameters	Regulatory framework to ensure the protection of representative, rare and vulnerable forest ecosystems. Financial instruments for the promotion and maintenance of forests in protected areas. Information tools of an inventory and support nature for actions to support biodiversity and forest protection.
Scope for improvement	Presence of all measurement parameters Evaluation of the effectiveness of the parameters
Example of a source of detection and information	National and/or regional forestry laws or measures, Park Environmental Plans, or Forest Management Plans. Specific expenditure chapters of regional competence, EU funding lines. Inventories, forest management plans at company, intercompany or upper district level, park environmental plans or forest management plans, thematic maps at national and/or regional level; Habitats Directive and Special Areas of Conservation (SAC); Official national and regional lists of protected areas.
Indicator 4.2 b	Area of forests in protected areas
Type of indicator	Mandatory

Measurement Parameters	Forest area in protected areas ha. _____ and type of protection under national, regional and IUCN regulations_____; Change in forest area in protected areas in % _____ over the period of no. _____ years.
Criticality threshold	Changes in protected forest area: greater than or equal to 0
Example of detection and information source	Local and regional or national forestry laws or regulations establishing protected areas. Environmental plans of national and regional parks, PTRC, area plans, etc.

Indicator 4.3 a	Legal-political-administrative framework on the general capacity to implement and support wildlife census and management activities with particular regard to species that may have a negative impact on forest regeneration, growth and biodiversity.
Type of indicator	Informative
Measurement Parameters	Legal, regulatory and administrative framework for carrying out censuses and wildlife plans. Economic/political and financial context to define and develop guidelines for wildlife census and management.
Scope for improvement	Presence of measurement parameters
Example of detection and information source	Local and regional laws or regulations aimed at ensuring knowledge of wildlife. Specific expenditure chapters of regional or local competence. Community funding lines. Wildlife censuses, wildlife plans.

Indicator 4.3 b	Loading of domestic animals in the forest
Type of indicator	Informative
Measurement Parameters	Presence of a regulatory framework and/or financial instruments to rationalise the burden of domestic animals in the forest
Scope for improvement	Presence of measurement parameters
Example of detection and information source	National and/or regional forestry laws or measures, Park Environmental Plans, or Forest Management Plans. Specific regional or local expenditure chapters, EU funding lines.

Indicator 4.3 c	Presence of a regulatory legal framework for the protection of endangered plant or animal species

Type of indicator	Informative
Measurement Parameters	Legal framework for the protection of endangered species.
Example of detection and information source	Specific national, regional and/or local laws or measures (park environmental plans, park establishment laws specific laws. Red lists);

Indicator 4.4 a	Legal-political-administrative framework on the evaluation and support of traditional forest resource management systems
Type of indicator	Informative
Measurement Parameters	Presence of a regulatory framework and financial instruments for the protection and enhancement of traditional forest resource management systems.
Example of detection and information source	Specific local and regional laws or measures Specific expenditure chapters of regional or local competence. Community funding lines.

Indicator 4.5 a	Legal-political-administrative framework for the protection of dead, old, monumental and rare species trees
Type of indicator	Informative
Measurement Parameters	Presence of a regulatory framework capable of guaranteeing the protection of dead, ultracentenary, monumental and rare species trees. Presence of information tools of a management and support nature for actions to safeguard dead, old, monumental and rare species trees.
Example of detection and information source	Regional and/or local forestry laws or measures. Specific expenditure chapters of regional competence, EU funding lines. Inventories, Forest Management Plans at company, intercompany or upper district level, Park Environmental Plans or monument tree inventories.

CRITERION 5
MAINTAINING AND APPROPRIATELY IMPROVING THE PROTECTIVE FUNCTIONS OF FOREST MANAGEMENT (WITH SPECIFIC ATTENTION TO SOIL PROTECTION AND WATER REGULATION)

Indicator 5.1 a Indicator 5.2 a	Legal - political - and administrative framework on the ability to activate and maintain the protective functions of the forest (soil protection, water regulation and possible direct protection of infrastructure, protection against avalanches and rockfalls). Legal - political - and administrative framework on the ability to implement and support inventorying and management activities of forest areas that take into account the prevailing functions of the forest, with particular reference to protective functions.
Type of indicator	Mandatory
Measurement Parameters	1. Legal regulatory and administrative framework to define and develop management planning guidelines for protection purposes. 2. Economic/political and financial context capable of defining and developing management planning guidelines for protection purposes. 3. Inventory and mapping information tools, planning tools and studies to support silvicultural management aimed at increasing and/or maintaining the protective functions of the forest.
Criticality threshold	Presence of documents 1, 2 and 3
Scope for improvement	Implementation of studies and research aimed at drawing up directives and regulations to optimise the protective functions of forests. Rationalisation and computerisation of inventory and mapping tools for the planning of areas with a protective function.
Example of a source of detection and information	Local and regional forest laws or measures or regulations aimed at supporting and guiding the management of forests that perform protective functions. Local and regional forestry laws or measures or regulations (forest development plans, PMPFs, park environmental plans, etc.) defining guidelines or management prescriptions for protective purposes. Inventories, and/or planning documents, also of a cartographic nature, of different levels able to define and elaborate management guidelines for protective purposes. Study and research initiatives to support silviculture aimed at improving the protective functions of forests and soil conservation.

Indicator 5.2 b	Availability of forest thematic mapping or other suitable documentation that locates the prevailing function of wooded areas, with particular regard to their protective function
Type of indicator	Mandatory

Measurement Parameters	Cartographic files at a scale appropriate for planning and management purposes indicating which wooded areas are of predominant interest for soil protection, water quality and the possible direct protection of infrastructure.
Criticality threshold	Presence of hydrogeological constraint mapping. 100% of the planned forest area must be covered by the cartography or other relevant documentation.
Scope for improvement	Computerisation and dissemination of mapping and, alternatively, expansion of the mapped area of forest management plans or similar.
Example of a source of detection and information	Cartographies of forest management plans, company and inter-company, forest inventories, thematic soil maps, hydrogeological instability maps, basin plans, forest sheets, etc.

Indicator 5.2 c	Extent of forest area managed for protection and hydrogeological purposes, related to water quality and related to infrastructure protection
Type of indicator	Informative
Measurement Parameters	Forest area under protective restrictions ha _____, its % of the total forest area _____
Scope for improvement	Presence of monitoring plans. Activation of tools for monitoring and verifying the protective function of forests
Example of detection and information source	National and local laws, measures, forestry regulations, regional or local planning and programming (national and regional park environmental plans, inventories, area plans, plans and management tools at farm and inter-farm level) or their equivalents; hydro-geological constraint map, hydro-geological instability map and other thematic maps at local, regional, basin plans, etc.

CRITERION 6
MAINTENANCE OF OTHER FUNCTIONS AND SOCIO-ECONOMIC CONDITIONS

6.1. Forest management planning must aim to respect the multiple functions of forests for society, have a special regard for the role of the forestry sector in rural development, and above all consider new employment opportunities related to the socio-economic functions of forests. Continuity of employment throughout the year must be an objective to aim towards; furthermore, the management of any reduction in personnel or the period of employment of employees must be conducted in a socially compatible manner.

Indicator 6.1 a	Employment in the forestry sector
Type of indicator	Informative
Measurement Parameters	Total number of employees in the forestry sector ____ Change in the total number of persons employed in the forestry sector over the last n. _____ years _____ %
Scope for improvement	Monitor knowledge on the labour market, dividing the data by the forest utilisation sector.
Example of detection and information source	Statistical sources (ISTAT, Chamber of Commerce ...); Forest Plans/Programmes, Rural Development Plan

Indicator 6.1 b	Legal - political - administrative framework on employment measures
Type of indicator	Mandatory
Measurement Parameters	Legal and regulatory background on direct and indirect employment measures Economic/political and financial environment capable of supporting the growth of the forestry system and the integration of the forestry sector into the rural sector
Criticality threshold	Presence of documents 1 and 2
Scope for improvement	Improving the organisation of work through greater specialisation, qualification and safety of workers.
Example of detection and information source	National and/or regional forest laws or measures; Forest Plans/Programmes

Indicator 6.2 a	Forestry as a percentage of Gross Domestic Product, or GDP, or other macroeconomic indicator
Type of indicator	Informative
Measurement Parameters	Percentage of the chosen indicator related to the forestry sector compared to the corresponding value of the regional primary sector

Scope for improvement	It is desirable for information to be known and for forestry indicators to increase
Example of detection and information source	Official statistics.

Indicator 6.2 b	Legal - political - administrative framework on the capacity to promote the development of the forestry sector
Type of indicator	Informative
Measurement Parameters	Legal and regulatory framework to promote the development of the forestry sector. Economic/political and financial context able to define, elaborate and support policy lines to promote the development of the forestry sector. Information and dissemination tools aimed at promoting the development of the forestry sector.
Example of detection and information source	Local and regional programmes or documents aimed at promoting the development of the forestry sector.

Indicator 6.2 c	Monitoring the effects of management
Type of indicator	Informative
Measurement Parameters	Tools for monitoring the effects of public interest services related to forest management activities.
Example of detection and information source	Specific studies; Regional plans; Ex ante and ex post monitoring of rural development plans

Indicator 6.3 a	Legal - political - administrative framework on property rights
Type of indicator	Mandatory
Measurement Parameters	Legal and regulatory background on property rights, tenure agreements, customary rights and customary use regulations
Criticality threshold	Presence
Example of detection and information source	National and/or regional forestry laws or measures; Forest Plans/Programmes

Indicator 6.4 a	Public accessibility of forests

	Note: all Italian forests are accessible, except in the case of closed funds
Type of indicator	Mandatory
Measurement Parameters	Regulatory framework allowing public access, except in specific, regulated cases (closed funds, protected integral reserves, and other specific cases). Presence of regulation of use in relation to the different categories of potential users, and in particular the access modalities for hunters. Economic/political and financial context able to define programmes for the promotion of the areas and tourist/recreational activities. Information and dissemination tools aimed at promoting recreational services.
Criticality threshold	Presence
Scope for improvement	Since forests are in most cases accessible to the public, improvements concern signposting and usability, promotion and dissemination. Medium- to long-term projects to improve the usability of the forest by the public are desirable. Planning will have to consider recreational aspects in its drafting.

Indicator 6.5 a	Woods of historical, cultural and spiritual significance
Type of indicator	Informative
Measurement Parameters	List or evidence of forests of historical, cultural and spiritual significance
Example of detection and information source	Regional Forest Programme Inventories, specific research, land registers, etc.

Indicator 6.5 b	Legal - political - administrative framework relating to forests of historical, cultural and spiritual significance
Type of indicator	Mandatory
Measurement Parameters	Legal and regulatory framework to protect forests of historical, cultural and spiritual value
Criticality threshold	Presence
Example of a source of detection and information	National and/or regional forestry laws or measures; National and/or Regional Forest Plan; Regional Forest Programme Environmental Plans, Park Plans, Forest Management Plans, Territorial Urban Plans, Landscape Plans, etc.

6.6. Forest managers, contractors, employees and forest owners must be sufficiently informed and encouraged to keep up-to-date on sustainable forest management through continuous training.In

addition, special attention must be paid in general to training, further training, information and other social services for workers and the local community.

Indicator 6.6 a	Legal - political - administrative framework on vocational training
Type of indicator	Mandatory
Measurement Parameters	Legal, regulatory and planning framework to promote training and dissemination in the forestry sector.
Criticality threshold	Presence
Scope for improvement	Special attention should be paid to training, further education, information and other social services for workers and the local community.
Example of a source of detection and information	National and/or regional forestry laws or measures; National and/or Regional Forest Plan; Regional Forest Programme Rural Development Plan (EC Reg. 1257/99); Regional or provincial programmes and initiatives concerning training or outreach in forest areas.

Indicator 6.7 a	Legal - political - administrative framework on workers' safety, health and welfare
Type of indicator	Mandatory
Measurement Parameters	Legal and regulatory framework relating to workers' safety, health and welfare
Example of detection and information source	National and/or regional forestry laws or measures; National and/or Regional Forest Plan; Regional Forest Programme

Indicator 6.7 b	Accident statistics
Type of indicator	Mandatory
Measurement Parameters	Number of annual accidents in the forestry sector and % change over the last n. _____ years
Example of detection and information source	Official statistics, studies and specific research (ASL, INAIL data; Labour Inspectorate data, etc.)